Amendments to the Claims

1. (Currently Amended) A clean-in-place system for cleaning an apparatus, the system comprising:

a tank containing a fluid composition having a measurable physical property at a first measured value, the tank having a supply valve and a return valve;

a fluid supply conduit in fluid communication with the supply valve of the tank and an inlet of the apparatus;

a fluid return conduit in fluid communication with the return valve of the tank and an outlet of the apparatus;

a physical property sensor in the fluid return conduit for repeatedly sensing the measurable physical property of fluids passing through the fluid return conduit and for generating a physical property signal corresponding to each sensed measurable physical property; ~~and~~

a flow rate sensor in the fluid return conduit for repeatedly sensing the flow rate of fluids passing through the fluid return conduit and for generating flow rate signals; and

a controller responsive to physical property signals from the physical property sensor and flow rate signals from the flow rate sensor and providing control signals to the supply valve and the return valve, the controller executing a program stored on the controller to:

open the supply valve and the return valve to circulate the fluid composition through the tank and the apparatus,

compare successive physical property signals from the sensor, and

close the return valve at a time after successive physical property signals have a deviation greater than a predetermined amount, the time being calculated in dependence on the flow rate signals.

2. (Currently Amended) The clean-in-place system of claim 1 wherein:

the system further includes a second tank containing a second fluid composition having the measurable physical property at a second measured value, the second tank having a supply valve and a return valve, and

the controller executes a program stored on the controller to:

open the supply valve and the return valve of the tank to circulate the fluid composition through the tank and the apparatus,

close the supply valve of the tank and open the supply valve of the second tank to circulate the second fluid composition through the second tank and the apparatus,

compare successive physical property signals from the physical property sensor, and

close the return valve of the tank at a time after physical property signals correspond to the second measure value.

3. (Original) The clean-in-place system of claim 2 wherein:

the fluid composition is an alkaline cleaning solution,

the second fluid composition is an acidic cleaning solution, and

the measurable physical property is pH or conductivity.

4. (Original) The clean-in-place system of claim 1 wherein:

the fluid composition is an alkaline or acidic cleaning solution, and the measurable physical property is pH or conductivity.

5. (Original) The clean-in-place system of claim 1 wherein:

the fluid composition is water, and the measurable physical property is conductivity or turbidity.

6. (Currently Amended) The clean-in-place system of claim 1 wherein:

the physical property sensor in the fluid return conduit repeatedly senses the pH ~~and flow rate~~ of fluids passing through the fluid return conduit ~~and generates a physical property signal corresponding to each sensed measurable physical property~~; and

the controller executes a program stored on the controller to:

open the supply valve and the return valve of the tank to circulate the fluid composition through the tank and the apparatus,

compare successive pH signals from the sensor, and

close the return valve of the tank at a time after the pH signals have a deviation greater than a predetermined amount, the time being calculated in dependence on the sensed flow rate.